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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,157	01/31/2002	John F. Corson	10010382-1	3574

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AGILENT TECHNOLOGIES, INC.
Legal Department, DL429
Intellectual Property Administration
P.O. Box 7599
Loveland, CO 80537-0599

EXAMINER

SIEFKE, SAMUEL P

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/066,157

Applicant(s)

CORSON, JOHN F.

Examiner

Samuel P. Siefke

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-21,27,29,30 and 33-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-21,27,29,30 and 33-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election of Group I in the reply filed on 3/25/05 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims **15-21, 27, 29-30, 33-37, 39-45** and **47-48** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/47964.

WO '964 teaches a wide angle, limited rotation, micro-lens scanning of DNA arrays. The micro-lens on low moment of inertial oscillating arm, while light source 24, detector 10,95, and supplementary lenses are stationary, achieve rapid, wide angle pixel-based microscopy. Auto focus raising and lowering stage 50, by actuator 44, while object 2 translates, enables rapid, wide-angle confocal microscopy (abstract). The scanning microscope includes a light source mounted on a stationary support and associated with optical elements defining an optical path for light to pass from the light source to the micro objective lens, then to a spot on the surface to be examined. In any of the microscope systems which employ a table to receive the object, the table is associated with three adjustable elevators to raise, lower, and tilt the table for focusing, and a control system is constructed to conduct a prescan of the object in which data concerning orientation is stored, and a control system responsive to the stored data is effective to actuate the elevators as scanning proceeds to maintain the object in focus (page 14 bottom to page 15 top). All optical elements cooperate to perform in a manner similar to a conventional multi element objective lens. Starting on page 28 and continuing to page 31, the reference discloses a method of adjustment of focus of the scanner. The focus correction is detected by photosensors 10 detecting modulation of the light by the tissue sample or by fiducial points. As the tissue sample approaches perfect focus, the amplitude of the high frequency components in the signal of the

photosensors is increased relative to that of the lower frequency components and best focus is defined as that height of the microscope slide at which the ratio of high frequency components to low frequency components is maximized (page 30). Prescan of the microscope slide enables determination of the height of best focus of the microscope slide at a chosen grid of points on the microscope slide. This enables detection of whether the slide is tilted or bowed. This information is stored in computer memory and accessed during the progress of the subsequent fine resolution "examination" scan. During the examination scan the microscope slide is held on its support in exactly the same position it occupied in the prescan. When the examination scan occurs, the focus mechanism continually tracks the surface of the microscope slide in accordance with the stored data. In regard to gross height error due to pitch, roll or bow the computer program analyzes the prescan data and determines gross tilt correction. The actuators are accordingly set to correct gross tilt prior to the examination scan. During examination scan, as the linear stage 11 moves gradually while the microscope slide is scanned repeatedly, the position of the microscope slide is continually adjusted by focus mechanisms 8 based upon the stored prescan data for pitch and bow (page 31). WO '964 further discloses reading of fluorescence by conventional FITC labeling, by illuminating the objects with light of about 494 nm and collecting the low intensity fluorescing radiation of about 518 nm, the emitted light being separated from the excitation light with filters (page 40). The high numerical aperture provides excellent collection of fluorescent light that is sent in all directions by the illuminated spot (page 40). Seen in fig. 3 the light source is coplanar to the calibration

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member (uniform fluorescent layer). Fluorescence detection further comprises techniques for DNA sequencing where rectangular arrays of sites at which hybridization reaction occurs between a known DNA fragment and an unknown DNA (page 42). The scans are performed over very large areas because different reactions are distributed over on microscope slide (page 42).

Overbeck does not teach calibration of the focal length with a fluorescent member.

Overbeck, however does teach pre-scan of the microscope, slide using a chosen grid of points on the microscope to calibrate the focal length. Overbeck further teaches that measurements are made using fluorescent detection. It would have been obvious to one of ordinary skill to prescan the slide using a fluorescent grid in order to calibrate with the same type of light being detected during measurement. As to a uniform layer versus a grid of points, it would have been obvious to employ an expanded grid to provide the most optimum picture of the slide during pre-scan in order to provide the most accurate adjustment of the focal length during analysis.

Claims **38** and **46** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/47964 in view of King et al. (USPN 5,812,272).

WO '964 teaches a wide angle, limited rotation, micro-lens scanning of DNA arrays as seen above.

WO '964 does not teach using CY3 and CY5 as fluorescent labels.

King teaches examples of suitable labels than can be used for fluorescent labels that include well known and commonly available ones such as fluorescein, indocarbocyanin dyes, (e.g., CY3, CY5), Texas Rd, ethidium bromide, and chelated lanthanides (col. 8, lines 8-12). Therefore, it would have been obvious to one having an ordinary skill in the art to modify WO '964 to include CY3 and CY5 fluorescent labels because it is well known in the art to use such labels in fluorescent detection methods.

Response to Arguments

Applicant's arguments filed 3/25/05 have been fully considered but they are not persuasive. Applicant argues, "Overbeck does not teach or disclose a method of using a chemical array reader that Includes using a calibration member having a uniform fluorescent layer to adjust the scan settings of the chemical array reader as is claimed in the subject application." WO '964 discloses reading of fluorescence by conventional FITC labeling, by illuminating the objects with light of about 494 nm and collecting the low intensity fluorescing radiation of about 518 nm, the emitted light being separated from the excitation light with filters (page 40). The high numerical aperture provides excellent collection of fluorescent light that is sent in all directions by the illuminated spot (page 40). Prescan of the microscope slide enables determination of the height of best focus of the microscope slide at a chosen grid of points on the microscope slide.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel P. Siefke whose telephone number is 571-272-1262. The examiner can normally be reached on M-F 7:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on 571-272-1700. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sam P. Siefke


Jill Warden
Supervisory Patent Examiner
Technology Center 1700

June 13, 2005